Alternatives Considered

3.1 Introduction

The Milan Beltway Extension project has fixed beginning/ending points. The south end must start/end and tie directly to the existing Beltway alignment south of Airport Road. The north end terminates at Blackhawk Road/John Deere Expressway. With a project length of approximately 3.2 kilometers (2.0 miles) in a direct line with the beginning/ending points, alternatives are limited. Figure 3-1 shows locational dictates.

In essence, the project only has only two alternatives, build on an alignment that connects to existing roadways on both sides of the Rock River or take no action.

3.2 Description of Alternatives

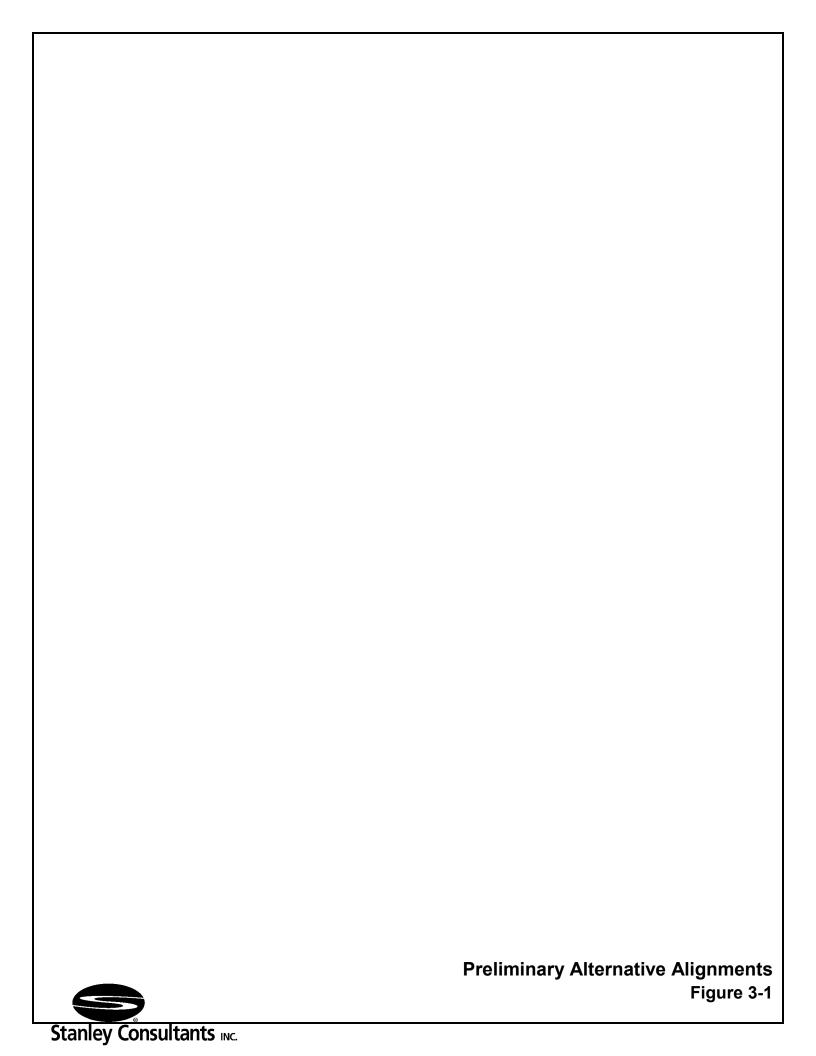
3.2.1 Alternatives Eliminated from Further Study

3.2.1.1 Alternate Crossing Locations. The general location for the Rock River crossing has been shown at its proposed location in all previous historical transportation plans for the Quad City metro area (see Section 1; "History of the Project").

No other Rock River crossing location was considered feasible. US 67 crosses the Rock River approximately 2.9 kilometers (1.8 miles) downstream of the proposed crossing. 27th Street and I-74 both cross the Rock River approximately the same distance upstream. Crossing the Rock River midway between the two existing crossing locations, coupled with the need to connect existing termini precludes any other viable crossing.

3.2.1.2 Other Modes of Transportation. Utilizing other modes of transportation is not considered a viable alternative to the Milan Beltway Extension. The current and anticipated traffic volumes on Blackhawk Road and the John Deere Expressway are

primarily local in origin and volumes by rail or air travel.	destination.	No	opportunity	exists	for	reducing	these



Public transportation is currently provided by the Rock Island County Metropolitan Mass Transit District (RICMMTD) and now known as Metrolink. Southpark Mall in Moline is probably the single most significant destination of local traffic near the project. RICMMTD currently provides service to Southpark. It is unlikely that improving or expanding public transportation service would relieve present or projected traffic volumes.

The Transit District presently has a bus route using the John Deere corridor (Route No. 60). This route services an area extending from downtown Rock Island on the north and west to Illini Hospital in Silvis on the east. The route follows 52nd Avenue from Southpark Shopping Center, jogs north to John Deere Expressway on 7th Street and serves Rock Valley Plaza just west of the project. In 1991, total average daily ridership on this route was 864 passengers.

In 1996, average daily traffic on the John Deere Expressway near the proposed project was 28,700 vehicles. If it is assumed that only 1.2 passengers ride each vehicle, 34,440 passengers per day utilize private vehicles versus only 565 riding the bus. Mass transit is not a viable alternative to the construction of a new facility. Less than two percent of all riders choose mass transit (buses) for transportation within this particular corridor..

3.2.1.3 Expressway with At-grade Intersections Alternative. An expressway and a freeway differ in that expressways employ at-grade, direct access intersections with intersected roadways; freeways employ interchanges with grade separations (controlled access). The proposed facility is unusual because it connects two expressways (John Deere Expressway and the existing Milan Beltway) with a section of roadway which technically qualifies as a freeway. (The existing Milan Beltway is presently a two-lane facility at the south end of the proposed project but plans are being made to expand this roadway segment to four lanes). Because of its unusual nature, the proposed facility is being described as an "expressway with controlled access" (grade separations).

An expressway alternative with at-grade intersections was also evaluated and rejected as infeasible. An at-grade intersection for the Milan Beltway Extension and John Deere Expressway (Blackhawk Road) was investigated. Projected traffic volumes resulted in level of service F due to the large volume of through and turning traffic competing for signal clearance time. This results in a situation that creates breakdowns in traffic flow, bottlenecks, excessive queue backups, and unacceptable delay. The proposed interchange separates turning traffic from through traffic volumes. Turning traffic is accommodated by two ramp intersections with 52nd Ave./Blackhawk Road that operate at acceptable levels of service due to the elimination of the major route (Milan Beltway) through traffic conflicting with projected turning traffic volumes. Turning movements utilize the signalized ramp intersections and the Milan Beltway Extension through traffic travels unimpeded under Blackhawk Road/52nd Avenue. Blackhawk Road and 52nd Ave. were combined to provide direct local route continuity across the Milan Beltway Extension, which also provides direct access to the Milan Beltway for these local streets via the interchange ramp intersections.

An interchange with I-280 is impractical and would not be allowed because there is currently an interchange at I-280 and Airport Road approximately 1.2 kilometers (0.7 miles) west of the proposed Beltway crossing. Interstate 280 is a designated freeway and at-grade intersections are not allowed to connect to a freeway (Interstate facilities).

Projected traffic volumes at the Airport Road interchange necessitated a grade separation. With an at-grade intersection, level of service would be D or E. Also, it would have been necessary to provide double left turn lanes for Airport Road traffic entering the proposed Beltway.

3.2.1.4 Tollway Alternative. A study (Leisch, 1986) was performed to determine the feasibility of toll financing to pay for construction of the proposed Rock River bridge. The study showed that tolls could finance between \$4.0 and \$9.0 million of construction cost. This is substantially less than the 1986 estimated construction cost of \$28,000,000. Based on the great difference in estimated project cost and the amount that could be feasibly financed by toll revenues, toll financing was dropped from consideration. (This feasibility study is on file with IDOT District 2 office in Dixon.)

Future traffic cannot be accommodated with an at-grade intersection at the proposed Milan Beltway and the John Deere Expressway and still maintain a desired level of service. 52^{nd} Avenue carries traffic over the proposed Milan Beltway, connecting Blackhawk Road and 52^{nd} Avenue, for east-west traffic movements. The area along 52^{nd} Avenue East of the interchange is undergoing development. The street provides an alternate route to the Southpark Mall area.

3.2.1.5 Transportation System Management (TSM) Alternatives. TSM alternatives are usually oriented toward optimizing existing transportation systems. The Bi-State Regional Commission considered TSM alternatives during preparation of the Urban Area Transportation Plan. None were recommended. Alternatives include High-Occupancy-Vehicle (HOV) lanes, fringe parking/park and ride, ride sharing, and signal synchronization.

HOV lanes are generally not recommended in urban areas the size of the Quad-Cities where populations and key transportation facilities are fractured by rivers and multiple municipality boundaries. There are currently no HOV lanes within the Metro area.

Fringe parking/park and ride has been considered and some interest apparently exists but funding has never been available. Transportation logistics such as the fractured origin - destination features discussed above, further complicates this issue.

Attempts have been made (Bi-State communication) to generate interest in ride sharing and larger employers have been contacted in this regard but little or no interest has been expressed.

Individual cities in the Bi-State region have taken advantage of the federal government's "green light" program to improve signal sychronization. This program continues.

TSM alternatives are considered impractical for the Beltway project.

3.2.1.6 Congestion Management Activities. The Intermodel Surface Transportation Efficiency Act of 1991 introduced the concept of establishing a variety of monitoring and management systems to guide optimization of transportation infrastructure. The congestion management system is a part of the metropolitan planning process in all urbanized areas with a population over 200,000.

In addressing construction management it is inportant to recognize the differences between the Quad City area and Chicago or St. Louis for instance. What applies to the larger cities may not apply to the Quad Cities. The report "Quad City Area Congestion Management Activities, October 1997" discusses possible strategies for the metropolitan area. A number of solutions apply to the Milan Beltway Extension project. These are briefly discussed below.

- Traffic Operational Improvements
 - Traffic Signal Improvements (timing improvements, demand-response signals, coordinated systems, computerized systems)
 - Roadway Geometric Improvements (turn lanes, acceleration/deceleration lanes, channelization)
- Public Transit Operational Improvements
 - Transit Routing Changes (modifications, expansion)
- Non-Motorized Operational Improvements
 - Infrastructure Improvements (bike lanes, paths, sidewalks)
- Access Management
 - Driveway Control
 - Median Control
 - Frontage Roads
- General Purpose Lanes
 - Freeway Lanes
 - Arterial Lanes

3.2.2 Build Alternatives

A number of alternatives were developed for each of the project elements such as alignment, bridge, interchanges, and borrow area crossing. All alternatives are discussed in the latest design and location report available from IDOT District 2 office in Dixon. This section of the EIS deals only with those alternatives that could have a significant impact on the environment.

3.2.2.1 Alignment. Three alignments were evaluated and closely follow nearly identical alignments shown on Figure 3-1. The maximum distance between any of the three alignments is less than 107 meters (350 ft). Alignment 2 was selected as "preferred"

because it avoids removal of substantial bottomland woodlands, shifts the proposed roadway away from Ben Williamson Park, and provides better potential access to existing properties on the south side of Blackhawk Road. There was no difference in any of the alignment alternatives as they related to agricultural operations.

3.2.2.2 Interchanges. An interchange at Airport Road is required to accommodate future traffic volumes efficiently, safely, and at an acceptable level of service. Three interchange types were studied and a combination partial cloverleaf/diamond (see Figure 3-2) was selected for this location. Selection was made on the basis of minimizing right-of-way needs on the west side of the Beltway and leaving the northeast quadrant undeveloped. In addition, it accommodates the traffic without dual left turn lanes and provides level of service "C" or better. The preferred alternative best served the highway user and left nearly 12 hectares (30 acres) in the northeast quadrant for continued agricultural use.

Five interchange types were considered at 52nd Avenue. Initially, the combination partial cloverleaf/diamond (see Figure 3-3) was selected for use at this location. This interchange type best fit existing topographic conditions, provided reasonable access to existing properties, and handled all traffic movements at level of service "C" or better. The city of Rock Island requested development of an alternative (B) that would allow westbound traffic to flow directly into the city without need to go through an interchange, or even reduce speed benefitting the city's commercial base (see Figure 3-4). After holding a public hearing on the matter the Rock Island City Council rejected Alternative B as area residents felt the proposal provided no access to Blackhawk Road and complicates the provision of services to Rock Island residents who live in a subdivision on the Rock Island-Moline border. There was no difference in alternatives as they related to agricultural operations.

The combination partial cloverleaf/diamond shown on Figure 3-3 remained the preferred interchange type at Blackhawk Road/52nd Avenue.

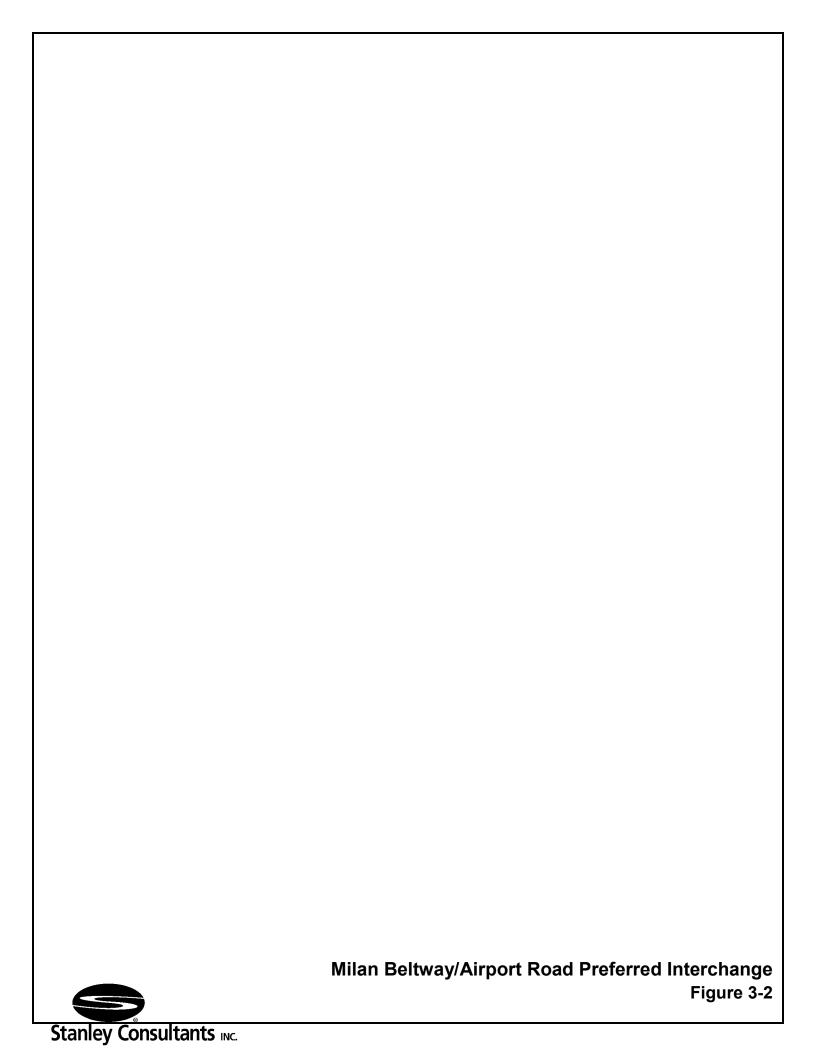
- **3.2.2.3 Rock River Bridge.** Because this reach of the Rock River is particularly susceptible to severe ice jams, the number and location of piers were given prime consideration. Four alternative bridge span/pier lengths were considered. These ranged between eight and eleven piers and span lengths of approximately 40 meters (130 ft) and 65 meters (213 ft). Based on cost studies and pier spacing to minimize ice jams, the preferred bridge type is an 11 span facility with 7 interior spans of 50 meters (164 ft). Bridge piers in the river will be built using cofferdams. The cofferdams and piers will be built off of temporary structures such as tramways, causeways, or anchored barges. This bridge will provide much less obstruction to ice than the two upstream bridges, 27th Street and I-74, where span spacing is as narrow as 13 meters (43 ft) and has only one span of 50 meters (164 ft). None of the alternatives affected agricultural operations.
- **3.2.2.4 Borrow Area Crossings.** The water-filled borrow area between I-280 and the Rock River can be crossed using a bridge or fill. A bridge would be constructed contiguous with the I-280 and Rock River bridges. Using the fill option requires approximately 99,450 cubic meters (130,000 cubic yards) of material. The fill crossing is

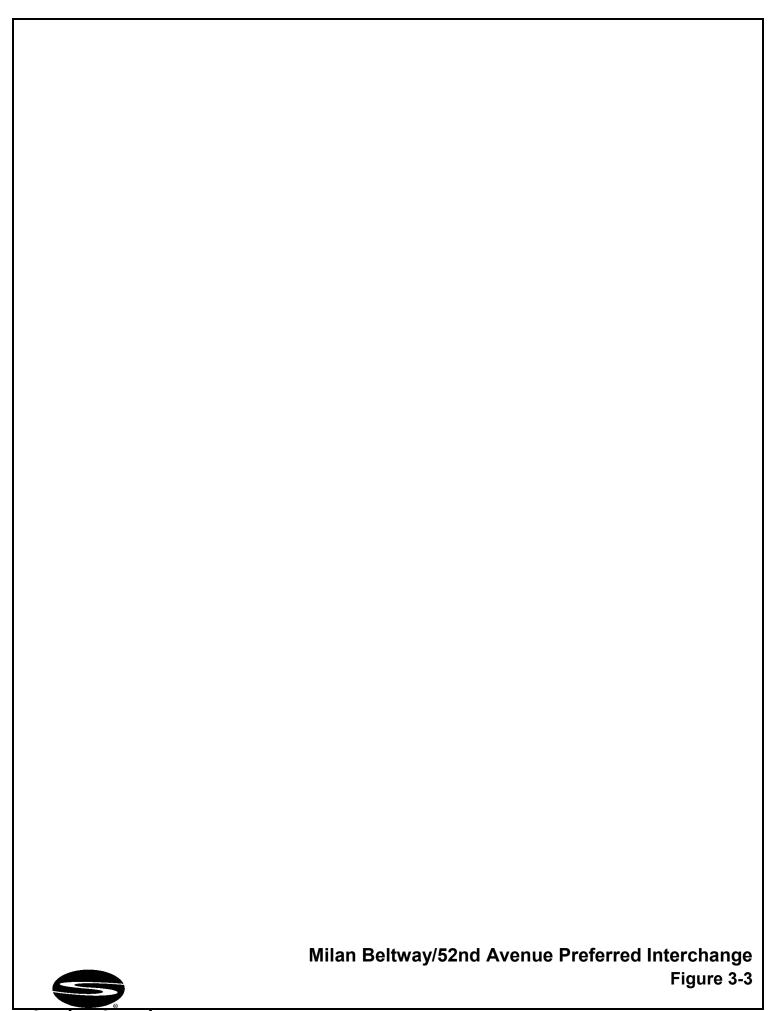
preferred as it is about one-half of the cost of the bridge alternative and will not create environmental problems in the old borrow area or the Rock River (see Appendix C). Neither alternative affected agricultural operations.

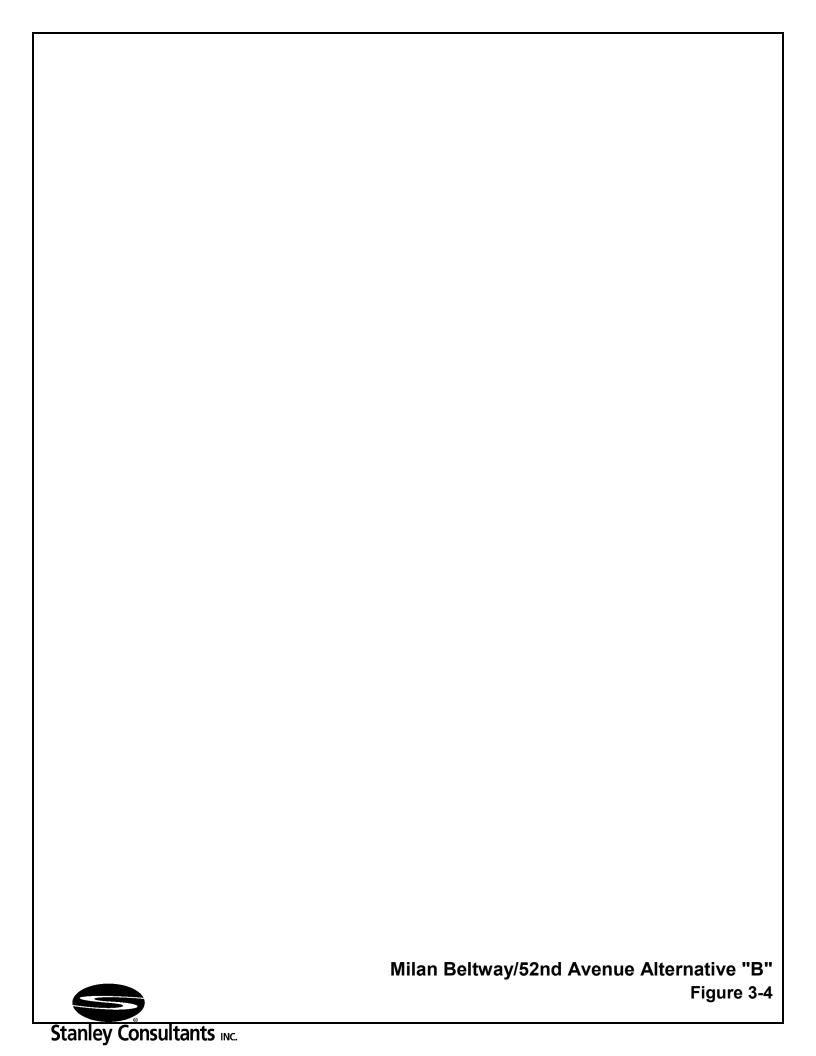
3.2.3 No-Action Alternative

If the no-action alternative was selected, the existing roadway system in the vicinity of the proposed project would remain unchanged. The John Deere Expressway would not have been modified to accommodate traffic crossing the Rock River. The termination point of the Milan Beltway at Airport Road would remain unchanged. Normal maintenance and resurfacing of the affected roadways would continue to be carried out by the IDOT as warranted.

Traffic volumes on the John Deere Expressway would continue to increase as projected on Figure 1-4. Potential impacts resulting from increasing traffic volumes through Black Hawk State Historic Site would become an increasingly controversial issue. Increasing traffic volumes through Black Hawk State Historic Site would result in level of service E by the year 2005, creating the need to consider four lanes through the Historic Site. Approximately 6 hectares (15 acres) of the site would be lost to the hypothetical widening of Blackhawk Road. Such an extensive 4(f) and parkland/historic site impact is considered unacceptable for consideration by the IDOT. At the July 31, 1984, public hearing regarding the proposed improvement to Blackhawk Road/John Deere Expressway from 24th Street in Rock Island to I-74 in Moline, the Department of Transportation stated that construction would end at 24th Street and no construction, besides routine maintenance, would occur throughout Black Hawk State Historic Site. (See Page D-5).







For the No-action Alternative, traffic volumes on Airport Road west of the Beltway would be approximately one and one-half times more than those projected for the Build Alternative. Volumes east of the Beltway would more than double under the no-action alternative (see Figure 1-4).

Due to increased traffic through Black Hawk State Historical Site and traffic volumes on Airport Road, this alternate is therefore eliminated from further consideration.

3.3 Preferred Alternative

The preferred alternative is a four-lane, access-controlled expressway connecting the existing Milan Beltway (at its present terminus at Airport Road) to the John Deere Expressway (see Figure 3-5).

The project will cross I-280, a water-filled borrow area, and the Rock River. Interchanges will be provided at Airport Road and 52nd Avenue. No tolls will be collected.

The alignment will be essentially due north-south from Airport Road to near the 52nd Avenue interchange. A single curve will extend eastward to connect to the John Deere Expressway. A reverse or "S" curve will connect 52nd Avenue with Blackhawk Road to the west (52nd Avenue interchange). A grade separation routing 52nd Avenue over the Milan Beltway Extension is planned. A combination partial cloverleaf/diamond type of interchange, as shown on Figure 3-3 will be employed.

A grade separation and combination partial cloverleaf/diamond type of interchange will also be employed at Airport Road.

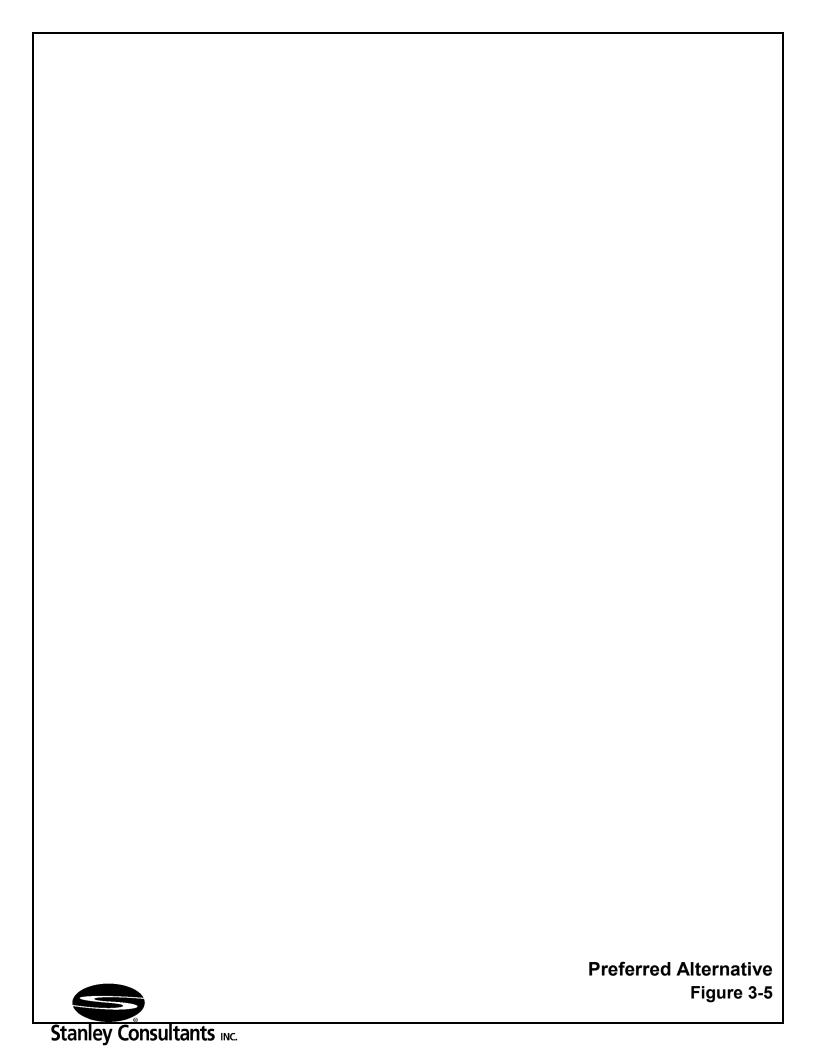
No interchange is planned at I-280.

The bridge for the Rock River crossing is an 11-span structure with 7 interior spans of 50 meters (164 ft). This bridge will provide much less obstruction to ice than the upstream bridges. Bridge piers will be set parallel to the flow of the Rock River current to minimize obstruction. Section 4.14.3 discusses impacts during bridge construction.

Third Street access from Blackhawk Road will be closed. Access to 3rd Street and the medical office complex and warehouse facilities will be provided from 52nd Avenue. The Milan Beltway Extension will connect to the John Deere Expressway to the east and 52nd Avenue will connect to Blackhawk Road to the west. Existing Blackhawk Road between these two connection points will be closed to all but local traffic. East-west traffic on John Deere Expressway/Blackhawk Road will have to use the proposed facility through the 52nd Avenue interchange. The water-filled borrow area between I-280 and the Rock River will be crossed by installing fill as required. The width of the fill material at the water's surface will be approximately 67 meters (220 ft). The roadbed will be approximately 9 meters (30 ft) above the water surface. See Section 4.14.3 for additional information regarding impacts during construction of the borrow area crossing.

All elements of the proposed facility have been thoroughly evaluated to select the most environmentally-sound alternative. Minimization of right-of-way to prevent loss of residences

and b	ousinesses section, inte	was a key erchanges,	considera	ation in s roads.	selecting	the 1	most	feasible	design	for	the	roadwa	y,



The loss of businesses and residences was minimized by the selection of interchange types requiring less right-of-way. Access to all remaining properties is being maintained or enhanced.

Interchange geometrics were evaluated for smooth traffic flow and user recognition while considering environmental impacts and costs. Dual turning movements were avoided without sacrificing vehicle storage capacity.

The preferred alignment was developed in response to comments by representatives of the US Fish & Wildlife Service and Illinois DNR at the October 11, 1985, scoping meeting. Agency representatives requested that the centerline of the project be located as far east as possible to avoid as much bottomland timber as practicable. Appendix D contains notes of the meeting.—A bottomland forest was almost entirely avoided by utilizing the preferred alignment.

A bridge type and design is proposed which will provide a maximum flow clearance. Span lengths were increased to reduce the number of piers in the water to minimize ice jams and rise in water levels.

Current estimated cost for the project is \$46.2 million.

The preferred alternative meets a number of congestion management strategies discussed in Section 3.2.1.6. These are:

• Traffic Operational Improvements

- The latest innovations in traffic signals will be used for the proposed project. Signals will be coordinated, demand-response signals installed, and signal timing will be used to improve traffic flow in the project area.
- Turn lanes, acceleration/deceleration lanes and channelization are included in the project to reduce existing or potential congestion. Radii will be increased to handle truck turning movements.
- Public Transit Operational Improvements
 - The Rock Island County Metropolitan Mass Transit District has plans to use the proposed project for a bus route.
- Non-motorized Operational Improvements
 - A separated bicycle structure is proposed for the Milan Beltway Extension bridge across the Rock River. Access points to the crossing are proposed on the top of the Milan flood protection levee bike trail and in future Ben Williamson Park in Rock Island. This important trail crossing enhances the area's existing and proposed trail system.

Access Management

- The proposed project greatly improves the carrying capacity of Airport Road and to a lesser extent Blackhawk Road and 52nd Avenue. Driveways and access points will be consolidated providing a safer driving environment. Frontage roads will be provided along Airport Road to provide a controlled and safe access to adjacent uses especially

an auto salvage yard and United Parcel Service. Medians are used throughout the entire project. Access to the truck terminal near 78th Avenue would be improved.

• General Purpose Lanes

- The project provides approximately 3.2 kilometers (2.0 miles) of four-lane access-controlled divided highway crossing the Rock River.
- Airport Road is proposed to be widened to four lanes, increasing the carrying capacity of the facility. Two additional lanes will be provided to the existing Beltway between the end of the project at 78th Avenue and US Route 67. Both these improvements will improve the arterial system.

The preferred alternative meets the primary purpose and need of diverting traffic on Blackhawk Road and the John Deere Expressway south and west across the Rock River to relieve traffic through the Black Hawk State Historic Site to the extent that four-lane warrants would not be met

The proposed project provides an interconnection with Airport Road and should relieve traffic congestion.

The project meets a need identified for the past 30 years in the metropolitan area's transportation plan.

Completion of the project would relieve existing and anticipated pressure on several heavily-traveled roadways in the vicinity of the project. These roadways include Blackhawk Road, John Deere Expressway, US Route 67 across the Rock River, existing Milan Beltway south of Airport Road, and Airport Road.

The final selection of an alternative will not be made until the preferred alternative's impacts and comments on the Draft EIS from agencies and the public have been fully evaluated.

3.3.1 Construction Staging

Traffic on the existing Milan Beltway between 78th Avenue and Airport Road, on Airport Road, and on Blackhawk Road/John Deere Expressway Extension is affected by construction of this proposed project. Four alternatives for maintaining traffic on Airport Road/Existing Milan Beltway and three for the Blackhawk Road/John Deere Expressway were developed. Details of these alternatives and the preferred alternatives may be found in the combined report-design study for this project. The report is on file with the IDOT District 2 office in Dixon. Preferred staging alternatives are summarized below. Additional construction impacts are discussed in Section 4.14.

3.3.1.1 Airport Road/Existing Milan Beltway. For the Airport Road/Existing Milan Beltway portion of the project all through traffic along Airport Road is detoured onto I-280 and Highway 6 (see Figure 3-6). The Milan Beltway is constructed one-half at a time maintaining traffic through the construction zone to Airport Road. Staged construction on Airport Road and use of the interchange ramp No. 3 as a run-around allows the Milan Beltway traffic to continue west and/or east along Airport Road.

Travel distance for Airport Road traffic is increased by approximately one mile. Travel distance for Milan Beltway traffic is increased by approximately zero to two miles depending upon construction stage. The construction schedule can be expedited in the critical stage to reduce the effects of increased travel distance. Construction staging concepts for Airport road, the Milan Beltway Extension, and the interchange south of Airport Road are summarized below and shown on Figures 3-7 to 3-9.

STAGE I (Airport Road/Existing Milan Beltway) (see Figure 3-7)

Traffic

Traffic on existing Airport Road and existing Milan Beltway.

Construction

- Southbound Milan Beltway from Station 296+73 to Station 332+75
- Ramp No. 1 from Station 1+00 to Station 20+73
- John Deere entrance relocation
- Median crossover from Station 332+75 to Sta. 340+00.

STAGE II (Airport Road/Existing Milan Beltway) (see Figure 3-8

Traffic

Airport Road east of the Milan Beltway is closed to through traffic.

Milan Beltway traffic through crossover at Station 305± to southbound lanes then through crossover at 335± to existing Milan Beltway. Traffic is allowed to travel west on Airport Road.

Construction

- Airport Road and access roads complete from Station 85+00 to the East
- Bridge
- Milan Beltway northbound from Station 310+00 to Station 334+00
- Ramp 3 complete
- Ramp 4 from Station 0+00 to Station 10+00
- Temporary pavement crossover (one lane) from Ramp 4 Station 5+00 to Ramp 3 Station 13+00
- Temporary crossover (one lane) at Station 32±.

STAGE III (Airport Road/Existing Milan Beltway) (see Figure 3-9)

Traffic

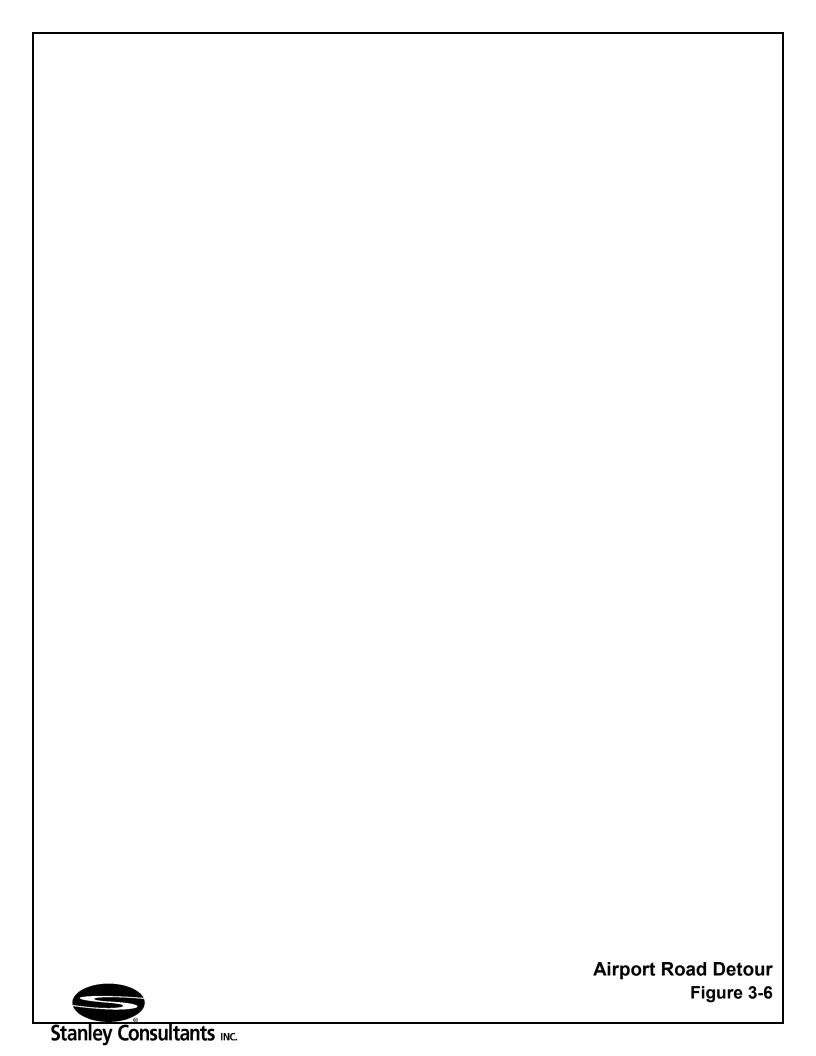
Airport Road closed to through traffic west of the Milan Beltway.

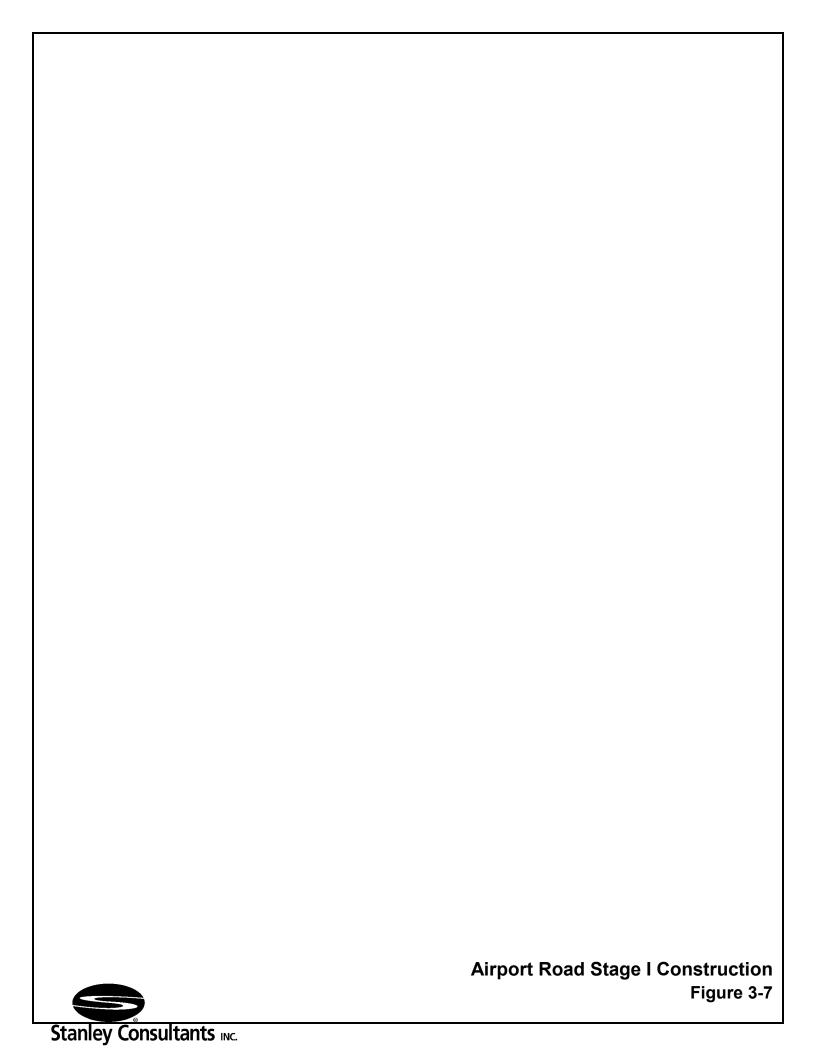
Milan Beltway traffic uses Ramps 3 and 4 as run-around connection to previously constructed Airport Road.

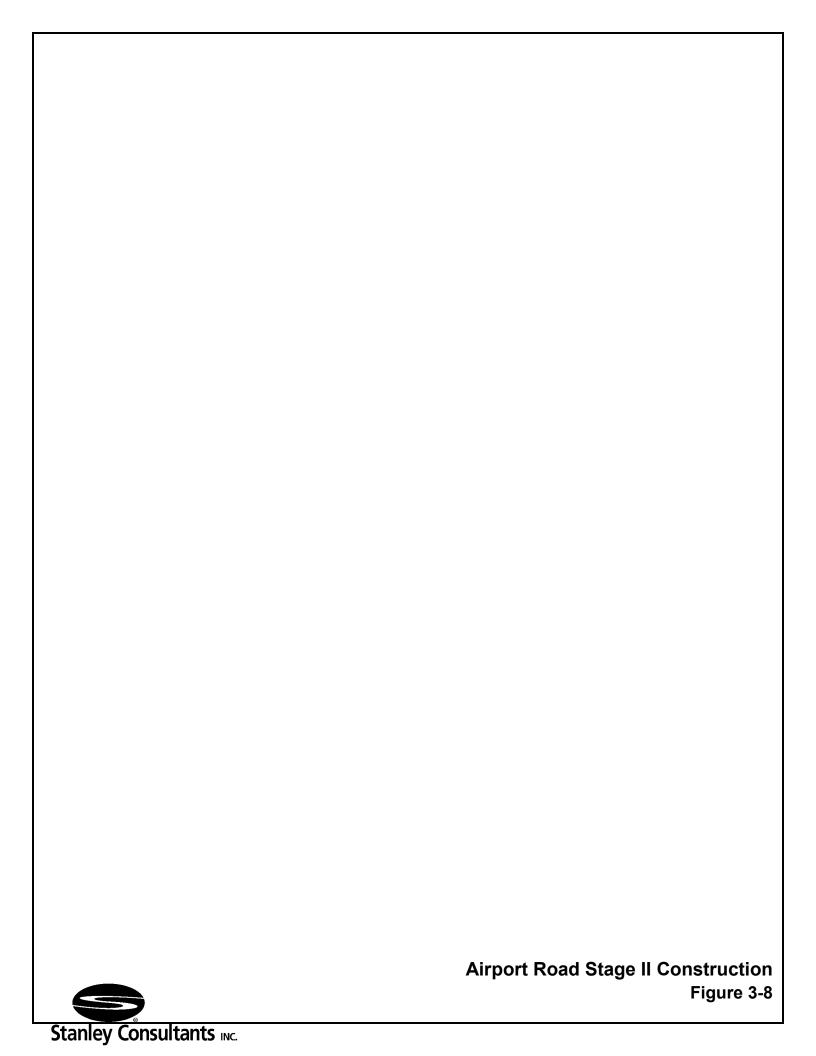
Airport Road east of the Milan Beltway is open to traffic.

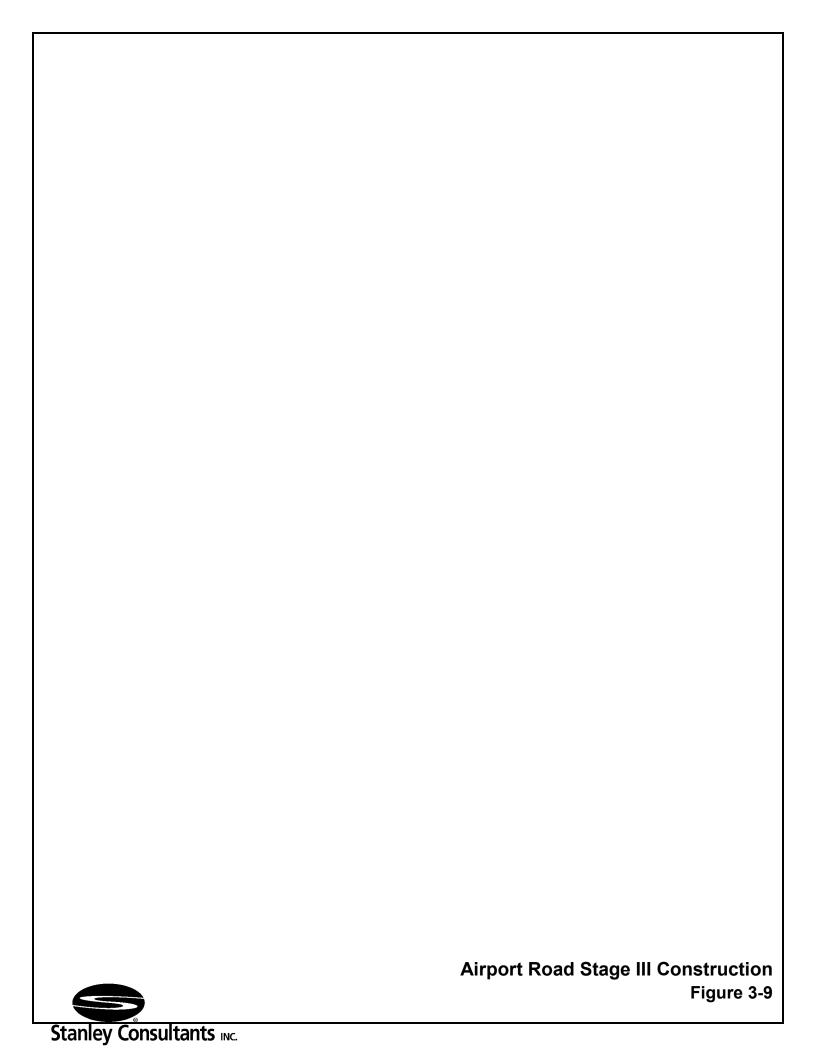
Construction

- Airport Road and frontage roads complete from Station 59+00 to Station 85+00
- Bridge
- Milan Beltway from Station 332+75 to Station 345+00
- Finish construction of Ramps 1 and 4 and Ramp 2 stub.









STAGE IV (Airport Road/Existing Milan Beltway)

Traffic

Traffic on new Airport Road, and on new Milan Beltway through interchange Ramps 1 and 3 to Airport Road.

Construction

 Remove median crossovers, Finish constructing medians, and Finish grade all slopes.

After the construction is completed on the Milan Beltway Extension Project north of Airport Road, the traffic can be routed over Airport Road and to and from Airport Road through the interchange ramps.

3.3.1.2 Blackhawk Road/John Deere Expressway. In order to construct the Blackhawk Road/John Deere Expressway Connection (BR/JDEC) portion of the project two-way traffic is maintained while one-half of each connection is constructed. Traffic is then routed along constructed portions of the Milan Beltway Extension and 52nd Avenue using crossovers and temporary pavement connections.

Construction staging concepts for the connection of the Milan Beltway Extension to the John Deere Expressway on the east end of the project and the connection of 52nd Avenue to Blackhawk Road on the west are summarized below and shown on Figures 3-11 and 3-12. Figure 3-10 shows activity south of Blackhawk Road/John Deere Expressway.

Prior to disrupting traffic with staged construction much of the Milan Beltway and 52nd Avenue can be constructed (See Figure 3-10). The 3rd Street connection to John Deere Road must remain open until access from 7th Avenue via new 52nd Avenue and 3rd Street relocation is open. 44th Street Connector must be completed to 44th Street prior to Stage I.

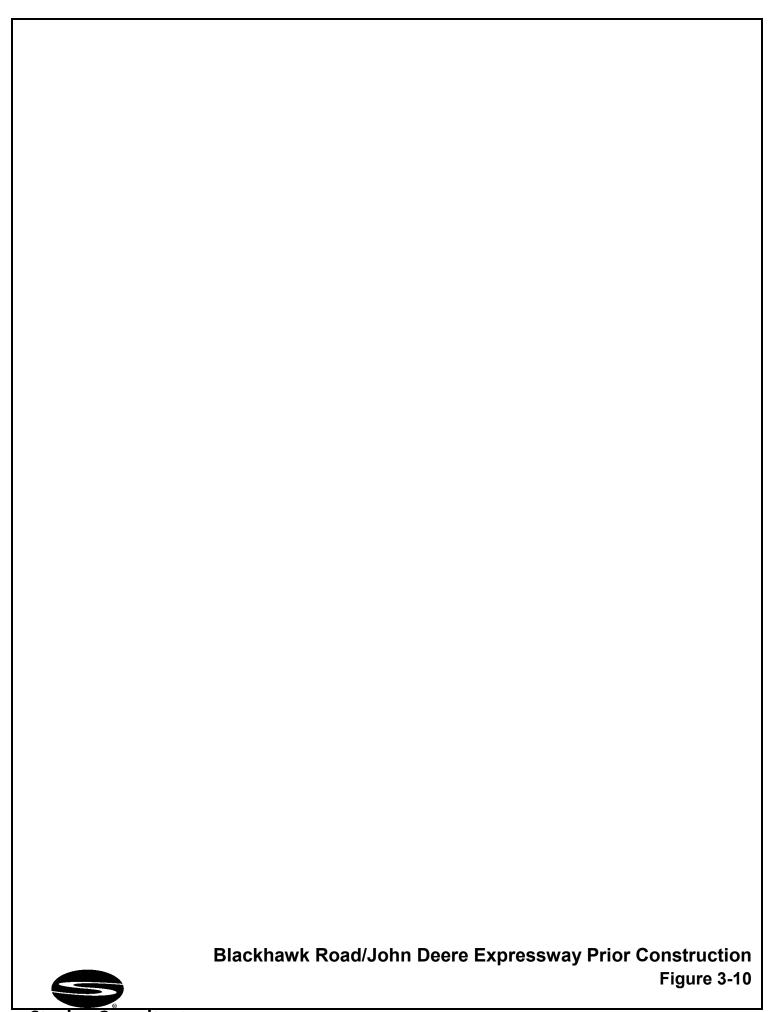
STAGE I (Blackhawk Road/John Deere Expressway Connection) (see Figure 3-11)

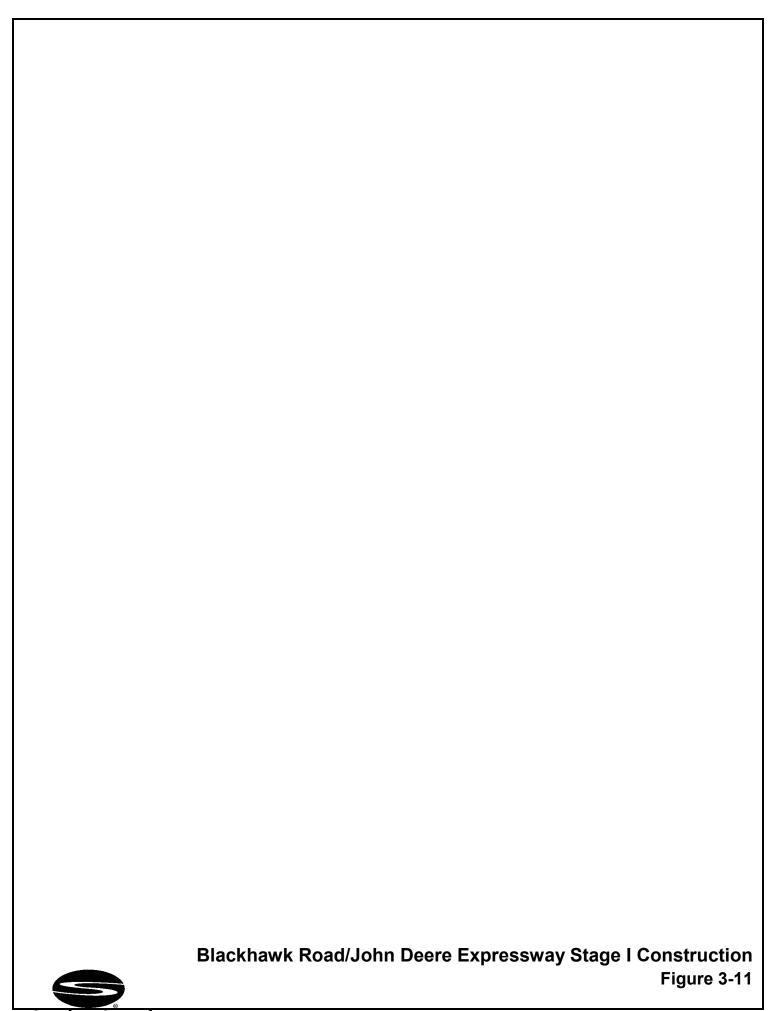
Traffic

Two-way traffic along the north 7.3 meters (24 ft) of existing BR/JDEC

Construction

- All of northbound one-half of the Milan Beltway Extension
- Southbound one-half of the Milan Beltway Extension to within approximately 1.2 meters (4 ft) of the BR/JDEC traffic
- Exit ramp in the northwest quadrant to approximately 1.2 meters (4 ft) from traffic
- All of 52nd Avenue, except north one-half at BR/JDEC.





STAGE II (Blackhawk Road/John Deere Expressway Connection) (see Figure 3-12)

Traffic

Westbound traffic on John Deere Expressway (east end of project) crosses over to Northbound Milan Beltway Extension, then crosses over to Ramp 2, follows Ramp 2 to 52nd Avenue, travels on 52nd Avenue through construction area on Blackhawk Road, then crosses over to north side of the Blackhawk Road.

Eastbound traffic on Blackhawk Road moves onto south side of 52nd Avenue, travels along 52nd Avenue through Interchange to Milan Beltway Extension, then moves along Northbound Milan Beltway Extension onto John Deere Expressway.

Construction

- Remaining exit Ramp 2
- Southbound one-half of the Milan Beltway Extension
- Westbound 52nd Avenue connection.

STAGE III (Blackhawk Road/John Deere Expressway Connection) (See Figure 3-12)

Traffic

Traffic on new improvements through interchange.

Construction

- Blackhawk Road relocation in its entirety
- Remove median crossovers, finish constructing medians, and finish grade all slopes.

The concepts outlined are preliminary and subject to revision during final design.

